1. [15 points]   For this problem note that the general solution to $y'' + 5y' + 4y = 0$ is $y = c_1 e^{-t} + c_2 e^{-4t}$. *(Note that minimal partial credit will be given on this problem.)*

a. [7 points]   Find a real-valued general solution to

$$y'' + 5y' + 4y = 3e^{-4t}.$$

b. [8 points]   Find the solution to the

$$y'' + 5y' + 4y = 16t, \qquad y(0) = 2, \quad y'(0) = -2.$$